

CLAIMS

1. Glass strand or glass strand structure coated with an electrically conducting coating composition which  
5 comprises (as % by weight of solid matter):
  - 6 to 50% of a film-forming agent, preferably 6 to 45%,
  - 5 to 40% of at least one compound chosen from plasticizing agents, surface-active agents  
10 and/or dispersing agents,
  - 20 to 75% of electrically conducting particles,
  - 0 to 10% of a doping agent,
  - 0 to 10% of a thickening agent,  
15 - 0 to 15% of additives.
2. Strand or structure according to Claim 1, characterized in that the film-forming agent is a polymer, preferably with an elastomeric nature.  
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3. Strand or structure according to Claim 2, characterized in that the film-forming agent is chosen from polyvinylpyrrolidones, poly(vinyl alcohol)s, polyacrylics, styrene polymers, poly(vinyl chloride)s,  
25 polyurethanes and the blends of these polymers.
4. Strand or structure according to one of Claims 1 to 3, characterized in that the plasticizing, surface-active and/or dispersing agent is chosen from  
30 optionally halogenated, aliphatic or aromatic, polyalkoxylated compounds, from polyalkoxylated fatty acid esters, from amino compounds, from silica derivatives and from the blends of these compounds.
- 35 5. Strand or structure according to one of Claims 1 to 4, characterized in that the conducting particles are based on carbon, in particular are graphite and/or carbon black particles.

6. Strand or structure according to Claim 5, characterized in that the size of the particles does not exceed 250  $\mu\text{m}$ , preferably 100  $\mu\text{m}$ .
- 5 7. Strand or structure according to one of Claims 1 to 6, characterized in that 30 to 60% of the particles have an aspect ratio which varies from 5 to 20.
8. Strand or structure according to one of Claims 1  
10 to 7, characterized in that at least 15% of the particles have a flake or needle shape.
9. Electrically conducting aqueous coating composition for a glass strand or glass strand structure,  
15 characterized in that it comprises:
- 6 to 50% of a film-forming agent, preferably 6 to 45%,
  - 5 to 40% of at least one compound chosen from plasticizing agents, surface-active agents  
20 and/or dispersing agents,
  - 20 to 75% of electrically conducting particles,
  - 0 to 10% of a doping agent,
  - 0 to 10% of a thickening agent,  
25 - 0 to 15% of additives.
10. Composition according to Claim 9, characterized in that it exhibits a viscosity of greater than or equal to 190  $\text{mPa}\cdot\text{s}$ , preferably of less than 40 000  $\text{mPa}\cdot\text{s}$ ,  
30 advantageously of less than 20 000  $\text{mPa}\cdot\text{s}$ , better still of less than 10 000  $\text{mPa}\cdot\text{s}$ , in particular of less than or equal to 5400  $\text{mPa}\cdot\text{s}$ .
11. Composition according to Claim 10, characterized  
35 in that it comprises:
- 2.5 to 45% and better still 15 to 40% of graphite particles having a size of between 10 and 100  $\mu\text{m}$ , at least 5% by weight of these particles being provided in the form of

flakes or needles with an aspect ratio of greater than or equal to 5,

- 0 to 45%, preferably 5 to 25%, of graphite particles with a size of less than 10  $\mu\text{m}$ , preferably having a mean size of the order of 4  $\mu\text{m}$ ,
- 2.5 to 45%, preferably 15 to 40%, of carbon black particles having a size of less than 1  $\mu\text{m}$ .

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12. Process for the preparation of a glass strand or of a glass strand structure according to one of Claims 1 to 8 which comprises the stages consisting in

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- coating a glass strand or a glass strand structure with the conducting coating composition according to one of Claims 1 to 11, and
- heating the said coated strand or the said coated structure at a temperature sufficient to remove the water and to strengthen the conducting coating.

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13. Process according to Claim 12, characterized in that the coating is carried out by immersion in a bath of the conducting coating composition.

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14. Process according to Claim 12 or 13, characterized in that the heating is carried out at a temperature of greater than approximately 105°C and less than approximately 220°C, preferably less than approximately 160°C.

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15. Glass strand structure according to one of Claims 1 to 8, characterized in that it is provided in the form of an assemblage of intertwined strands, for example a fabric, or nonintertwined strands, for example a nonwoven, such as a mat or a veil of continuous strands, or a grid.

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16. Structure according to Claim 15, characterized in that it exhibits an electromagnetic shielding value of between 5 and 50 dB, preferably between 5 and 35 dB, measured between 100 MHz and 2.7 GHz.

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17. Composite material comprising a matrix reinforced by glass strands or a glass strand structure according to one of Claims 1 to 8, 15 or 16.

10 18. Material according to Claim 17, characterized in that the matrix is a thermoplastic or thermosetting polymer or a cementing material.